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43. **Peronospora claytoniæ** Farlow. Enumeration of the Peronosporeæ of the United States, No. 11, <Bot. Gaz., vol. VIII, No. 10, October, 1883, p. 314.

On leaves of Portulacaceæ.

On *Claytonia Virginica* L. M. Varney, April 28, 1891, Piney Branch, Rock Creek, D. C.

44. **Peronospora rubi.** Rabenhorst, Fungi europæi, No. 2676. (1882.)

On leaves of Rosaceæ, tribe Rubeæ.

On *Rubus villosus* Ait. M. B. Waite, No. 270, September 8, 1888, Oregon, Ogle County, Ill. M. B. Waite, No. 271, September 10, 1888, Oregon, Ogle County, Ill. M. B. Waite, No. 279, September 10, 1889, Oregon, Ogle County, Ill. M. B. Waite, No. 560, Oct. 7, 1891, Zoolog. Park, Washington, D. C.

On *Rubus Canadensis* L. P. H. Dorsett and W. T. Swingle, No. 4029, October 29, 1891, Garrett Park, Montgomery County, Md. W. T. Swingle, No. 4030, October 29, 1891, Rockville, Montgomery County, Md. B. T. Galloway and P. H. Dorsett, November 8, 1891, Garrett Park, Montgomery County, Md. In the fall of 1891 many of the individuals of this host showed the bright red spots caused by the parasite.

45. **Peronospora sparsa** Berkeley. <Gard. Chron. and Agric. Gaz., London, April 5, 1862, pp. 307 and 308 with fig.

On leaves of Rosaceæ, tribe Roseæ.

On *Rosa* sp. cult. D. G. Fairchild, June, 1891, in greenhouse Geneva, Ontario County, N. Y. Mr. Fairchild reports this species as very destructive, completely defoliating the plants. Bordeaux mixture was afterward used with good success in preventing it.

46. **Peronospora sordida** Berkeley & Broome. Notices of British Fungi, No. 953. <Ann. and Mag. Nat. His., 3d ser., vol. VII, London, June, 1861, p. 449.

On leaves of Scrophulariaceæ.

On *Scrophularia nodosa* L. C. H. Demetrio, June, 1889, Sweet Springs, Saline County, Mo. M. B. Waite, No. 536, August 25, 1888, Urbana, Champaign County, Ill. M. B. Waite, No. 543, September 11, 1888, Rochelle, Ogle County, Ill. M. B. Waite, No. 317, September 14, 1889, Oregon, Ogle County, Ill. M. B. Waite, No. 142, September, 1889, Oregon, Ogle County, Ill.

NEW SPECIES OF FUNGI.

By J. B. ELLIS and B. M. EVERHART.

PUCCINIA SUKSDORFII, *n. sp.*—On leaves of *Troximon glaucum.* Washington (Suksdorf) and Helena, Mont. (Kelsey). I and II not seen; (III) sori small, black, naked almost from the first, subconfluent, amphigenous, the leaf often marked with a small round purplish spot on the side opposite the sori. Teleutospores short-elliptical, obtuse and broadly rounded at both ends, deep brown, granular-roughened all over as if sprinkled with minute grains of sugar, constricted at the septum; 40–50 × 25–30 μ, on pedicels scarcely longer than the spores.

PUCCINIA AGROPYRI, *n. sp.*—On leaves of *Agropyrum glaucum.* Montana, August, 1890. (F. D. Kelsey). (II) Sori epiphyllous, narrow, oblong or linear, short, cinnamon-yellow, only slightly elevated. Uredospores subglobose, ovoid or elliptical, pale, 20–25 × 18–22 μ; epispore tolerably thick and smooth, pedicels short. (III) Sori hypophyllous, oblong or linear, short, black, covered (almost permanently) by the lead-colored epidermis. Teleutospores cylindric-clavate, 60–75 × 20–25 μ, moderately constricted, pale, squarely truncate, broader and darker but scarcely thickened at the apex, sometimes obliquely truncate or rounded or even obtusely pointed. Pedicels short.

STICTIS COMPRESSA, *n. sp.*—On dead limbs of *Carpinus Americana.* London, Canada, May, 1891. (Dearness, No. 627.) Ascomata scattered or gregarious, immersed, compressed 1½ × ⅓^{mm} sunk in the wood; erumpent above in a small, round, white, minutely perforated, slightly prominent disk. Asci cylindrical, 225–260 × 10 μ, with abundant filiform paraphyses. Sporidia filiform, 220–240 × 1½ μ, nucleate. Differs from the ordinary type in its minute disk with only a small central perforation.

TRYBLIDIELLA PYGMÆA, *n. sp.*—On weather-beaten wood, Ohio. (Morgan, No. 961). Perithecia acutely-elliptical, erumpent, not polished, black, ¾–1^{mm} long, lips loosely closed when dry. Asci oblong, 65–80 × 15 μ including the short, abrupt stipe, paraphysate, 4-8 spored. Sporidia subbiseriate, fusoid-oblong, 3-septate, pale brown (hyaline at first). 16–20 × 6–7 μ, ends subobtuse.

VALSARIA HYPOXYLOIDES, *n. sp.*—On bark of some tree or shrub-Central Paraguay, South America. (Morong, No. 1431. Communicated by Dr. J. W. Eckfeldt.) Stromata erumpent, superficial, subcarnose, subseriate, subglobose, ½^{mm} in diameter, narrowed at base, purplish rust-color, appearing almost exactly like *Hypoxylon fuscum* (Pers), in color and shape. Perithecia peripherical, ovate, small, less than ¼^{mm} high, seated on the ovate, cinereous-gray core of the stroma, and barely covered by the thin outer layer. Ostiola subdiscoid or convex, umbilicate, black. Asci cylindrical, 90–115 × 12 μ, subsessile, paraphysate, 8-spored. Sporidia uniseriate, oblong-elliptical, 1-septate, dark brown, scarcely constricted, 12–15 × 7–9 μ. When the colored subferruginous coat is rubbed off the stroma is nearly black. Differs from *Hypoxylon* only in its soft stroma and uniseptate sporidia.

PHYLLOSTICTA GELSEMII, *n. sp.*—On leaves of *Gelsemium sempervirens* (cult.) Newfield, N. J., April, 1891. Spots suborbicular, 2–4^{mm} in diameter, or often occupying the apex of the leaf, pale yellow-brown with a purple border. Perithecia amphigenous, sublenticular, black, small, gregarious, shining, rather more abundant above. Sporules oblong-cylindrical, 12-16 × 3 μ.

PHYLLOSTICTA RHODODENDRI, *West.*—On leaves of *Rhododendron Catawbiense.* Newfield, N. J., April 20, 1891. Spots large; 1-3^{cm}, mostly marginal, dark reddish-brown, concentrically zoned, definitely limited, the living part of the leaf bordering the spots narrowly shaded with yellow. Perithecia innate, sunk in the parenchyma of the leaf, the dark apex barely visible and only very slightly prominent, epiphyllous, about 150 μ in diameter. Sporules narrowly and acutely elliptical, hyaline, continuous, often binucleate, 15–20×6–7 μ.

SPHÆROPSIS ALBESCENS, *n. sp.*—On dead limbs of *Negundo aceroides*. Brookings, S. Dak., September, 1891. (T. A. Williams.) Perithecia gregarious, globose, ½$^{\mathrm{mm}}$ in diameter, buried in the bark, but raising the epidermis into little pustules which are barely pierced by the papilliform ostiolum. Sporules oblong-elliptical, brown, continuous, obtuse, 15–20×8–10 μ. The perithecia are mostly found around the nodes of the smaller limbs, extending for a centimeter or more on each side of a bud, and the epidermis over these areas becomes whitened out.

STAGONOSPORA SPINACIÆ, *n. sp.*—On spinach, Brookings, S. Dak., July, 1891. (T. A. Williams.) Spots amphigenous, round, dirty white, 3–5$^{\mathrm{mm}}$ in diameter, without any very distinct border. Perithecia epiphyllous, erumpent, rough, black, subhemispherical, 75–100 μ in diameter, with a papilliform ostiolum. Sporules oblong-cylindrical, obtuse, often slightly curved, hyaline, 1–3 septate, 15–30×8–10 μ.

SEPTORIA ELYMI, *n. sp.*—On leaves of *Elymus Canadensis*. London, Canada, July, 1891. (Dearness, No. 808.) Perithecia subglobose, 100–120 μ in diameter, epiphyllous, mostly on narrow, dirty white spots 3–4$^{\mathrm{mm}}$ long by ½$^{\mathrm{mm}}$ wide, visible as black specks. Sporules clavate-cylindrical, bent or curved, continuous, faintly nucleate, 15–25×1½–2 μ. Differs from *S. bromi* Sacc., in its shorter sporules and narrow, elongated spots.

SEPTORIA JACKMANI, *n. sp.*—On leaves of *Clematis Jackmani* in a hothouse, Geneva, N. Y., August, 1891. (D. G. Fairchild.) Amphigenous. Perithecia large, conic-hemispherical, black, broadly perforated above, semi-immersed, the upper half projecting; gregarious on yellowish, indefinite spots. Sporules, clavate-filiform, 40–70×2½–3 μ nucleate, but not visibly septate, thicker above, subattenuated below, only moderately curved. This is quite different from *S. Clematidis*, Rab., which is on definite, brown spots, and has smaller perithecia and smaller sporules. It is much nearer *S. expansa*, Niessl., but, besides the different host plant, that species is hypophyllous and has narrower (1½–2 μ) sporules. Saccardo in *Sylloge* gives the sporules as only 1μ thick, but in the specimen in Rabenhorst-Winter Fungi Europæi, 2897, the sporules are, as just stated, 1½–2μ thick.

SEPTORIA SACCHARINA, *n. sp.* —On living leaves of seedling maples (*Acer saccharinum*), Niagara, Canada, August, 1891. (Dearness, No. 1812.) Spots amphigenous, scattered, small, definite, white, more obscure below, 1$^{\mathrm{mm}}$ in diameter. Perithecia few (½ on a spot), epiphyllous, lenticular, brown, 200 μ diameter. Sporules clavate-cylindrical, nucleate, hyaline, 40–50×1½–2 μ. Distinguished from the other acericolous Septorias by the small, white spots.

SEPTORIA DRUMMONDII, *n. sp.*—On leaves of *Phlox Drummondii.* London, Canada, September, 1891. (Dearness, No. 820.) Differs from *S. divaricata* E. & E. on *Phlox divaricata* (this JOURNAL, Vol. v, p. 151) in the perithecia being scattered thickly over the entire surface of the leaf, and not on any definite spots. Perithecia black, subprominent, 100 μ in diameter. Sporules nearly straight, nucleate, 35–50 × 1½–2 μ, rather narrower at one end.

HENDERSONIA GEOGRAPHICA, *n. sp.*—On fallen and decaying chestnut leaves. Newfield, N. J., April 4, 1891. Acervuli gregarious, on pale spots, dark brown, flattish, ¼–⅓^{mm} in diameter, mostly on the nerves of the leaf, and forming a kind of network, reminding one of *Asteroma geographica,* Fr. Sporules oblong-fusoid, pale brown, 3-septate, the terminal cells hyaline, acutely conical and 4–5 μ long, the colored part 10–12 × 3–3½ μ. Pedicels filiform, about 15 μ long, sometimes remaining attached to the sporule. Terminal cell prolonged into a short, subulate beak, or oftener simply narrowed into a subulate point. The terminal cells are finally deciduous. Differs from *P. nervalis,* E. & E. (to which it bears a strong resemblance) in its smaller, 3-septate sporules and larger acervuli.

GLŒOSPORIUM CATALPÆ, *n. sp.*—On living leaves of *Catalpa bignonioides.* Wilmington, Del., August, 1891. (Commons, No. 1804.) Spots orbicular, 2–3^{mm} in diameter; definite, reddish-brown, paler in the center. Acervuli minute. Spores oblong, hyaline, continuous, 2-nucleate, 10–15 × 3–5 μ, erumpent on the upper side of the leaf in small, yellowish heaps.

GLŒOSPORIUM DECOLORANS, *n. sp.*—On leaves of *Acer rubrum.* London, Canada, August, 1891. (J. Dearness, No. 813.) Occupying the areas between the main veins of the leaf, and causing large brown spots which occupy the entire surface of the leaf except a narrow strip along each side of the midrib and its main branches. Acervuli numerous, small, erumpent on the lower side of the leaf. Spores oblong-elliptical, hyaline, 5–8 × 2½–3 μ. Very destructive to the leaves.

MELANCONIUM MAGNOLIÆ, *n. sp.*—On dead trunks of *Magnolia glauca.* Newfield, N. J., June, 1891. Acervuli sunk in the bark, ovate-conical, 1–1½^{mm} in diameter, substratum pale. Conidia obovate, pale olive brown, with a hyaline margin and a large nucleus, 12–15 × 9–11 μ on stout (4 μ thick), simple or branching, obscurely septate basidia, 50–75 μ long, erumpent in masses or black cirrhi, like coarse black hairs or black wool.

PESTALOZZIA LATERIPES, *n. sp.*—On dead legumes of *Cassia Chamæcrista.* Newfield, N. J., September and October, 1891. Perithecia pustuliform or subhysteriiform, about ¼^{mm} in diameter, with a large, irregular opening above, sometimes with an elongated slit, as in *Hysterium.* Sporules clavate-cylindrical, yellowish brown, 3-septate, the upper cell rounded above with a hyaline, subconical tip bearing at its apex a 3-parted crest of three, spreading slender bristles 15–20 μ long, the lower cell narrower and furnished with an eccentric pedicel 10–12μ long, reminding one of a *Discosia.*

SCOLECOTRICHUM CARICÆ, *n. sp.*—On living leaves of *Carica papaya.* Lake Worth, Fla., March. 1891. (L. M. Underwood.) Maculicolous. Spots scattered, 1–2^{mm} in diameter, yellow above, becoming white in the center, suborbicular and definitely limited; completely covered below with densely crowded, minute, sphæriæform, black-brown tufts of the fungus. Basidia oblong or subclavate, continuous, 20–22 × 6–7μ, forming a compact peripherical layer on a minute tuberculiform base and bearing at their tips the ovate, uniseptate, pale brown, 12–20 × 8–10 μ, conidia.

MACROSPORIUM TABACINUM, *n. sp.*—On leaves of cultivated tobacco (*Nicotiana tabacum*), Raleigh, N. C., October, 1891. (Gerald McCarthy). Spots amphigenous, numerous, thin, white (rusty red or brown at first), suborbicular or irregular, 2–3^{mm} in diameter, definitely limited, with a narrow darker border. Fertile hyphæ effused, 35–45 × 3–4 μ, septate and torulose above. Conidia obovate, 15–25 × 10–12 μ, sessile, or longer (35–45 μ), narrowed below into a distinct stipe, 8–12 μ long. The shorter conidia are mostly 3-septate and the longer ones about 5-septate, one or two of the cells with a longitudinal septum. This is the "white speck" of the North Carolina planters.

MACROSPORIUM LONGIPES, *n. sp.*—On leaves of *Nicotiana tabacum.* Raleigh, N. C., October, 1891. (Gerald McCarthy.) Spots amphigenous, orbicular, rusty brown, 3-5 ^{mm} in diameter; orbicular, zonate. The entire leaf becomes brown and then the spots are a shade lighter than the surrounding parts. Fertile hyphæ effused on the spots, amphigenous, but more abundant above, slender (40–70 × 3–4 μ, septate and often constricted at the septa; erect, more or less torulose above. Conidia clavate, 40–50 × 15–20 μ, 3–7, mostly 5–6 septate, with two or more of the cells divided by a longitudinal septum, attenuated below into a distinct stipe 35–50 μ long, and often septate and torulose. This differs from *M. commune,* Rabh., in its effused hyphæ and smooth conidia, and from *M. tabacinum,* E. & E., in its brown, concentrically zoned spots and larger stipitate conidia. Known among the planters as "brown spot."

BRACHYSPORIUM CANADENSE, *n. sp.*—Parasitic on *Valsa ambiens?* On bark of dead maple limbs. Ottawa, Canada, October, 1890. (Macoun No. 49.) Hyphæ simple, brown; septate, 200–300 × 5 μ, forming dense, tobacco-brown, tuberculiform tufts, rising from the pustules of the *Valsa.* Conidia terminal, solitary, obovate-elliptical, pale brown, 1–3 septate, 20–40 × 12–15 μ.

CLASTEROSPORIUM POPULI, *n. sp.*—On dead places in living leaves of *Populus tremuloides.* London, Canada, June, 1891. (Dearness, No. 759.) On leaves of *Populus grandidentata.* Wilmington. Del. (Commons, No. 1806.) Conidia clavate, 1–2 septate, olive brown, 18–25 × 7–9 μ, mostly a little constricted at the septa, and subtruncate-apiculate at the apex; pedicles very short, almost none, subhyaline. The conidia arise directly from the cells of the leaf without any well-defined mycelium, and form a continuous olive brown or green stratum on the lower surface of the leaf, beginning with well-defined brown spots which soon spread and occupy the entire leaf—mostly the young terminal ones.

REVIEWS OF RECENT LITERATURE.

FARLOW, W. G., and SEYMOUR, A. B.—*A Provisional Host-index of the Fungi of the United States.* Part I, Polypetalae, pp. 1–52, Cambridge, 1888. Part II, Gamopetalae-Apetalae, pp. 53–134, Cambridge, September, 1890. Part III, pp. 135–220, Cambridge, June, 1891.

The issue of the third part of the above work, containing the endogens, cryptogams, and animals, and an addenda, together with an index to all three parts, finishes this most valuable and laborious work. As completed it contains 220 octavo pages. About 85 names on an average, including synonyms, are given on each page. The work will be a necessity to every American mycologist, and, aside from its direct value as a host-index, will be of very considerable worth as a guide to the synonomy of the American species of fungi. In accuracy and completeness it is almost without equal among mycological publications. It is to be wished, however, that a reference could have been given after each name of a fungus to one or more works in which it was reported on the host in question. It is likely that descriptions of some of the species will be troublesome to find. A title page for all three parts would also be a valuable addition.

Some interesting facts are revealed by a study of the index. The number of species reported on some genera of trees is truly astonishing. The family Cupuliferæ requires 24 pages, and these will probably average no less than 100 names of fungi to a page. A most striking fact is the very small number of species reported on Algæ. Only two species, both *Chytridii*, are given. These occur on four species of Algæ. In Europe, on the contrary, where the algal parasites have been carefully studied, their number is very considerable, probably aggregating several hundred species.

Botanists everywhere would no doubt be very grateful if the authors of the "Host-index" could be induced to prepare the converse work, namely, a list of the species of fungi of the United States with their host plants.—W. T. SWINGLE.

FISCHER, DR. ALFRED.—*Phycomycetes.* Rabenhorst's Kryptogamenflora. I Band. IV Abtheilung: Pilze; 45, 46 and 47 Lieferungen, pp. 1–192. Leipzig. Ed. Kummer, 1892.

Part. IV of this important work begins with No. 45. Part III on Discomycetes by Dr. Rehm still lacks eight numbers of completion, but